



SEQUENCE LISTING

GENERAL INFORMATION:

- (i) APPLICANT: Roncarolo, Maria-Grazia
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- (ii) TITLE OF INVENTION: USE OF INTERLEUKIN-10 TO PRODUCE A POPULATION OF SUPPRESSOR CELLS
- (iii) NUMBER OF SEQUENCES: 25
- (iv) CORRESPONDENCE ADDRESS:
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- (v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: Apple Macintosh
(C) OPERATING SYSTEM: Macintosh 7.5.5
(D) SOFTWARE: Microsoft Word 5.1a
- (vi) CURRENT APPLICATION DATA:
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- (vii) PRIOR APPLICATION DATA:
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(B) FILING DATE: 04-MAR-1992
- (viii) ATTORNEY/AGENT INFORMATION:
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(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 178 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Met His Ser Ser Ala Leu Leu Cys Cys Leu Val Leu Leu Thr Gly Val
1 5 10 15

Arg Ala Ser Pro Gly Gln Gly Thr Gln Ser Glu Asn Ser Cys Thr His
20 25 30

Phe Pro Gly Asn Leu Pro Asn Met Leu Arg Asp Leu Arg Asp Ala Phe
35 40 45

Ser Arg Val Lys Thr Phe Phe Gln Met Lys Asp Gln Leu Asp Asn Leu
50 55 60

Leu Leu Lys Glu Ser Leu Leu Glu Asp Phe Lys Gly Tyr Leu Gly Cys
65 70 75 80

Gln Ala Leu Ser Glu Met Ile Gln Phe Tyr Leu Glu Glu Val Met Pro
85 90 95

Gln Ala Glu Asn Gln Asp Pro Asp Ile Lys Ala His Val Asn Ser Leu
100 105 110

Gly Glu Asn Leu Lys Thr Leu Arg Leu Arg Leu Arg Arg Cys His Arg
115 120 125

Phe Leu Pro Cys Glu Asn Lys Ser Lys Ala Val Glu Gln Val Lys Asn
130 135 140

Ala Phe Asn Lys Leu Gln Glu Lys Gly Ile Tyr Lys Ala Met Ser Glu
145 150 155 160

Phe Asp Ile Phe Ile Asn Tyr Ile Glu Ala Tyr Met Thr Met Lys Ile
165 170 175

Arg Asn

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 170 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Met Glu Arg Arg Leu Val Val Thr Leu Gln Cys Leu Val Leu Tyr

1	5	10	15												
Leu	Ala	Pro	Glu	Cys	Gly	Gly	Thr	Asp	Gln	Cys	Asp	Asn	Phe	Pro	Gln
				20				25					30		
Met	Leu	Arg	Asp	Leu	Arg	Asp	Ala	Phe	Ser	Arg	Val	Lys	Thr	Phe	Phe
				35				40				45			
Gln	Thr	Lys	Asp	Glu	Val	Asp	Asn	Leu	Leu	Leu	Lys	Glu	Ser	Leu	Leu
				50			55				60				
Glu	Asp	Phe	Lys	Gly	Tyr	Leu	Gly	Cys	Gln	Ala	Leu	Ser	Glu	Met	Ile
65				70				75					80		
Gln	Phe	Tyr	Leu	Glu	Glu	Val	Met	Pro	Gln	Ala	Glu	Asn	Gln	Asp	Pro
				85			90						95		
Glu	Ala	Lys	Asp	His	Val	Asn	Ser	Leu	Gly	Glu	Asn	Leu	Lys	Thr	Leu
				100			105						110		
Arg	Leu	Arg	Leu	Arg	Arg	Cys	His	Arg	Phe	Leu	Pro	Cys	Glu	Asn	Lys
				115			120					125			
Ser	Lys	Ala	Val	Glu	Gln	Ile	Lys	Asn	Ala	Phe	Asn	Lys	Leu	Gln	Glu
				130			135				140				
Lys	Gly	Ile	Tyr	Lys	Ala	Met	Ser	Glu	Phe	Asp	Ile	Phe	Ile	Asn	Tyr
145				150				155					160		
Ile	Glu	Ala	Tyr	Met	Thr	Ile	Lys	Ala	Arg						
				165			170								

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 160 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Ser	Pro	Gly	Gln	Gly	Thr	Gln	Ser	Glu	Asn	Ser	Cys	Thr	His	Phe	Pro
1					5				10				15		
Gly	Asn	Leu	Pro	Asn	Met	Leu	Arg	Asp	Leu	Arg	Asp	Ala	Phe	Ser	Arg
					20			25					30		
Val	Lys	Thr	Phe	Phe	Gln	Met	Lys	Asp	Gln	Leu	Asp	Asn	Leu	Leu	
					35			40				45			
Lys	Glu	Ser	Leu	Leu	Glu	Asp	Phe	Lys	Gly	Tyr	Leu	Gly	Cys	Gln	Ala
					50			55				60			

Leu	Ser	Glu	Met	Ile	Gln	Phe	Tyr	Leu	Glu	Glu	Val	Met	Pro	Gln	Ala
65								70		75				80	
Glu	Asn	Gln	Asp	Pro	Asp	Ile	Lys	Ala	His	Val	Asn	Ser	Leu	Gly	Glu
						85			90					95	
Asn	Leu	Lys	Thr	Leu	Arg	Leu	Arg	Leu	Arg	Arg	Cys	His	Arg	Phe	Leu
				100				105					110		
Pro	Cys	Glu	Asn	Lys	Ser	Lys	Ala	Val	Glu	Gln	Val	Lys	Asn	Ala	Phe
						115		120				125			
Asn	Lys	Leu	Gln	Glu	Lys	Gly	Ile	Tyr	Lys	Ala	Met	Ser	Glu	Phe	Asp
					130		135				140				
Ile	Phe	Ile	Asn	Tyr	Ile	Glu	Ala	Tyr	Met	Thr	Met	Lys	Ile	Arg	Asn
					145		150			155				160	

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 147 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Thr	Asp	Gln	Cys	Asp	Asn	Phe	Pro	Gln	Met	Leu	Arg	Asp	Leu	Arg	Asp
1								5		10			15		
Ala	Phe	Ser	Arg	Val	Lys	Thr	Phe	Phe	Gln	Thr	Lys	Asp	Glu	Val	Asp
				20				25			30				
Asn	Leu	Leu	Leu	Lys	Glu	Ser	Leu	Leu	Glu	Asp	Phe	Lys	Gly	Tyr	Leu
				35				40			45				
Gly	Cys	Gln	Ala	Leu	Ser	Glu	Met	Ile	Gln	Phe	Tyr	Leu	Glu	Glu	Val
				50				55			60				
Met	Pro	Gln	Ala	Glu	Asn	Gln	Asp	Pro	Glu	Ala	Lys	Asp	His	Val	Asn
				65				70			75			80	
Ser	Leu	Gly	Glu	Asn	Leu	Lys	Thr	Leu	Arg	Leu	Arg	Leu	Arg	Arg	Cys
					85				90				95		
His	Arg	Phe	Leu	Pro	Cys	Glu	Asn	Lys	Ser	Lys	Ala	Val	Glu	Gln	Ile
						100			105				110		
Lys	Asn	Ala	Phe	Asn	Lys	Leu	Gln	Glu	Lys	Gly	Ile	Tyr	Lys	Ala	Met
					115			120			125				

Ser Glu Phe Asp Ile Phe Ile Asn Tyr Ile Glu Ala Tyr Met Thr Ile
130 135 140

Lys Ala Arg
145

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 15 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

CTAAGGAGGT TTAAC

15

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 10 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

ATGAGCTCAT

10

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 60 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

AGCCCAGGCC AGGGCACCCA GTCTGAGAAC AGCTGCACCC ACTTCCCAGG TAACCGGTAC

60

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 56 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

CGGTTACCTG GGAAGTGGGT GCAGCTGTT TCAGACTGGG TGCCCTGGCC TGGGCT

56

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 62 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GTAACCTGCC TAACATGCTT CGAGATCTCC GAGATGCCTT CAGCAGAGTG AAGACTTTCT

60

TT

62

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 48 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

CTTCACTCTG CTGAAGGCAT CTCGGAGATC TCGAACATG TTAGGCAG

48

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 35 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

CAAATG~~A~~AGG ATCAGCTGGA CAACTTGTTC TTAAG

35

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 44 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

CTTAAGAAC~~A~~ AGTTGTCCAG CTGATCCTTC ATTTGAAAGA AAGT

44

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 69 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GAGTCCTTGC TGGAGGACTT TAAGGGTTAC CTGGGTTGCC AAGCCTTGTC TGAGATGATC

60

CAGTTTTAT

69

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 73 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GATCATCTCA GACAAGGCTT GGCAACCCAG GTAACCCTTA AAGTCCTCCA GCAAGGACTC 60
CTAGATAAAA CTG 73

(2) INFORMATION FOR SEQ ID NO:15:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 61 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

CTAGAGGAGG TGATGCCCA AGCTGAGAAC CAAGACCCAG ACATCAAGGC GCATGTTAAC 60
G 61

(2) INFORMATION FOR SEQ ID NO:16:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 65 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

GTAAACATGC GCCTTGATGT CTGGGTCTTG GTTCTCAGCT TGGGGCATCA CCTCCTCTAG 60
TCGAC 65

(2) INFORMATION FOR SEQ ID NO:17:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 63 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

AACTCCCTGG GGGAGAACCT GAAGACCCTC AGGCTGAGGC TACGGCGCTG TCATCGATCT 60
GCA 63

(2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 59 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

GATCGATGAC AGCGCCGTAG CCTCAGCCTG AGGGTCTTCA GGTTCTCCCC CAGGGAGTT 59

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 60 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

CGATTCTTC CCTGTAAAAA CAAGAGCAAG GCCGTGGAGC AGGTGAAGAA CGCGTGCATG 60

(2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 54 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

CACGCGTTCT TCACCTGCTC CACGGCCTTG CTCTTGTGTTT GACAGGGAAG AAAT

54

(2) INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 58 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

CGCGTTTAAT AATAAGCTCC AAGACAAAGG CATCTACAAA GCCATGAGTG AGTTTGAC

58

(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 45 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

ACTCATGGCT TTGTAGATGC CTTGTCTTG GAGCTTATTA TTAA

45

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 51 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

ATCTTCATCA ACTACATAGA AGCCTACATG ACAATGAAGA TACGAAACTG A

51

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 64 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

AGCTTC~~A~~GTT TCGTATCTTC ATTGTCATGT AGGCTTCTAT GTAGTTGATG AAGATGTC~~A~~
ACTC 60
64

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 498 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

AATT~~C~~CATGGA GCGAAGGTTA GTGGTC~~A~~CTC TGCAGTG~~C~~CT GGTGCTG~~C~~TT TACCTGGCAC 60
CTGAGTGT~~G~~ AGGTACAGAC CAATGTGACA ATTTTCCCCA GACCTAAGAG ATGCCTTCAG 120
TCGTGTTAAA ACCTTTTCC AGACAAAGGA CGAGGTAGAT AACCTTTGC TCAAGGAGTC 180
TCTGCTAGAG GACTTTAAGG ATGCCAGGCC CTGTCAGAAA TGATCCAATT CTACCTGGAG 240
GAAGTCATGC CACAGGCTGA AACCAAGGACC CTGAAGCCAA AGACC~~A~~TGTC AATTCTTG~~G~~ 300
GTGAAAATCT AAAGACCCTA CGGCTCCGCC TGCGCAGGTG CCACAGGTT~~C~~ CTGCCGTGTG 360
AGAACAAAGAG TAAAGCTGTG GAACAGATAA AAAATGC~~C~~TT TAACAAGCTG CAGGAAAAAG 420
GAATT~~T~~TACAA AGCCATGAGT GAATTGACA TTTTTATTAA CTACATAGAA GCATACATGA 480
CAATTAAAGC CAGGTGAG 498

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 40 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

GAATTCCCAG GTTTAACGTA AGGAGGTTA ACCATCGATG

40